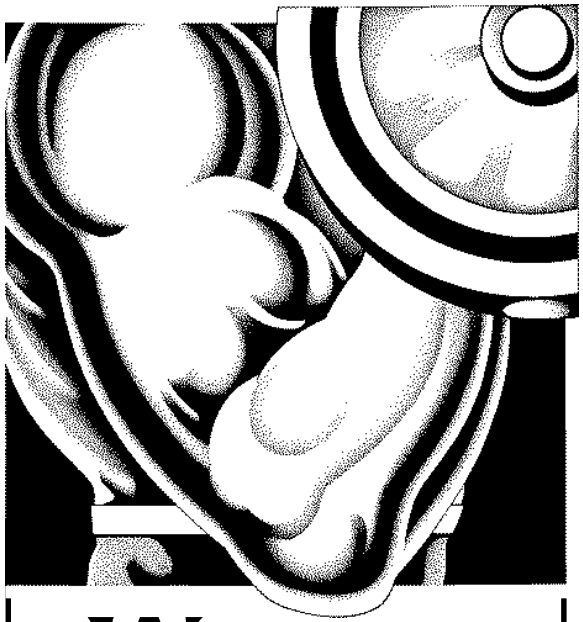


Weight Training Injuries

Weight training...

...get strong

...burn calories

...reduce stress

...get INJURIES???

RehabWorks

By: Karen E. Tanner

Starting a weight-training program is a great way to meet the needs of our body while also relieving stress and helping our self-image. When done with the proper techniques, weight training is a valued and pain-free part of the daily workout. Unfortunately, many individuals who train with weights regularly do not utilize proper technique, are skeletally immature, or use anabolic steroids. All of the above involve a high risk of injury. The weight-training injuries sustained not only harm the body, but they also reduce the individual's motivation to continue because of the pain experienced.

Of the injuries sustained, two basic categories are present, acute and chronic. Acute injuries are classified as those that occur from a macrotrauma (or one sudden incident). These commonly include:

- Sprains - involves ligaments, articular capsule, synovial membrane
- Strains - stretch, tear, or rip in the muscle, fascia, and/or tendon
- Tendon avulsions - tendon is separated from the attached muscle
- Compartment syndrome - increase in pressure within the muscle's compartment causing weakness

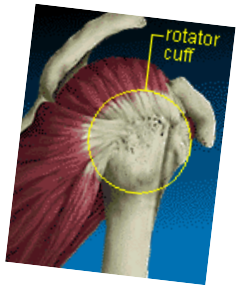
Poor lifting technique will cause stress on the body's soft tissues, thus forcing the body to adjust. Many times these "adjustments" biomechanically put the body into an injury prone position. To make matters worse, using heavy weights in the mechanically disadvantaged positions can cause injury to the tendons, ligaments, and muscles.

Several cases of weight-training injuries have been associated with the use of anabolic steroids. Steroids are designed to cause strength and muscle mass gains in the user, but they may cause physiologic changes in the soft tissues which makes them more susceptible to injury when under a load. Children's skeletal immaturity leaves them at risk to injure their growth plates. For this reason, the American Academy of Pediatrics has established guidelines for children who train with weights. (www.aap.org/policy/03327.html)

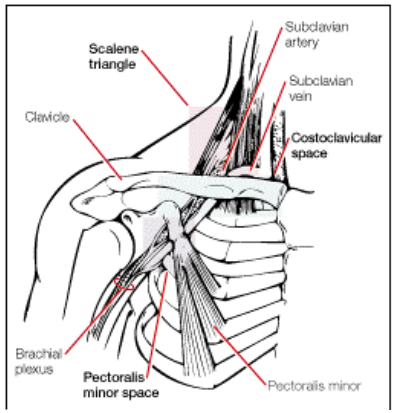
The second type of injury, classified as chronic, is attained from microtraumas (or repetitive stress). The most common cause of chronic injury is excessive training, or once again, the practice of improper technique.

Common chronic injuries associated with weight training include:

- Rotator cuff impingement - diffuse shoulder pain that increases with overhead activity
- Lower back pain
- Thoracic outlet syndrome (TOS) - compression of the subclavian artery and brachial plexus in the neck and shoulder



Specific exercises that can potentially damage the rotator cuff include the upright row, military press, and the "pectoral deck" machines. Injury to the rotator cuff is more common in people over age 40 but can occur in anyone presenting shoulder pain. Lower back pain can occur as a result of too much weight, improper form, or weakness in adjacent muscles. Symptoms of TOS include pain, sensation of cold, muscle weakness, muscle atrophy, and paresthesia.



Grades of Ligament Injuries

Grade 1	Some pain, minimal loss of function, mild point tenderness, little or no swelling
Grade 2	Pain, moderate loss of function, swelling, slight to moderate instability
Grade 3	Very painful, major loss of function, marked instability, tenderness, swelling

Grades of Muscle Strains

Grade 1	Local pain, minor loss of strength, mild swelling, ecchymosis (discoloration), and local tenderness
Grade 2	Moderate symptoms of grade 1 with impaired muscle function
Grade 3	Severe symptoms, loss of function, and often a palpable defect

Obviously the extent of injury and treatment surrounding weight lifting injures are broad. Thus, if you have any questions regarding a current injury, or if you would like more information on proper lifting techniques, please contact the staff at the KSC RehabWorks. We would love to help!

Mary K. Kirkland, ATC/L, CSCS
Supervisor, KSC RehabWorks
Mary.Kirkland-1@ksc.nasa.gov

Erik T. Nason, MS, ATC/L, EMT
RehabWorks Assistant Athletic Trainer
Erik.Nason-1@ksc.nasa.gov

Website
http://rehabworks.ksc.nasa.gov

References:

www.physsportsmed.com/issues/1998/03mar/laskow2.htm
www.physsportsmed.com/issues/1998/02feb/laskow.htm

RehabWorks
BIO-10 Room #1103 O&C Building
Kennedy Space Center, FL
Phone: *321.867.7497* **Fax:** *321.867.1144*